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(54) Title: A HYDROMETALLURGICAL SEPARATION PROCESS OF STEEL MILL ELECTRIC ARC FURNACE (EAF) DUST AND THE PIGMENTS OBTAINED BY THE PROCESS

(57) Abstract: A hydrometallurgical process for the treatment of steel mill electric arc furnace (EAF) dust containing agglomerates of small ferrite particles and larger magnetite particles, the process comprising the steps of: a) washing the EAF dust in water to dissolve soluble salts, metals and simple oxides contained in the dust, said washing step being performed under agitation and with an alkaline pH; b) decanting the solution of step a) to obtain a supernatant liquid containing the dissolved salts, metals and simple oxides and a slurry containing ferrites and magnetites, a non toxic amount of leachable lead and a reduced amount of calcium; c) separating the slurry and the supernatant liquid; d) adding to the slurry obtained in step c) an anionic surfactant to disperse the ferrite particles adsorbed on the magnetite particles; and e) treating the slurry from step d) to produce pigments selected from the group consisting of ferrite pigments, magnetite pigments and ferrite/magnetite pigments.



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